Listing of Claims

1. (Original) A method for k-space data acquisition for magnetic resonance imaging (MRI) characterized by using of at least first and second k-spaces for interleaved data acquisition, the at least first and second k-spaces covering substantially the same physical region.

2. (Original) The method of claim 1, the k-spaces having a first coordinate axis and a second coordinate axis, the method comprising:

a) sampling into a first direction along the first coordinate axis,
b) applying a first compensation pulse,
c) sampling into a second direction along the first coordinate axis, the second direction being opposite to the first direction,
d) applying a second compensation pulse,
e) repetitively carrying out the steps a) to d).

3. (Currently Amended) The method of claim~~s~~ 1~~or 2~~, the first and second compensation pulses being z-shimming pulses.

4. (Currently Amended) The method of claim~~s~~ 1~~, 2 or 3~~, further comprising incrementing a sampling position on the second coordinate axis after each step a) and / or after each step b).

5. (Currently Amended) The method of ~~anyone of the preceding~~ claim~~s~~ 1~~to 4~~, further comprising performing a partial k-space data acquisition by means of the sampling in steps a) and c).

6. (Currently Amended) The method of ~~anyone of the preceding~~ claim~~s~~ 1~~to 5~~ further comprising combining the sampled data of steps a) and c) to generate an image.

7. (Currently Amended) The method of ~~anyone of the preceding~~ claims 1 ~~to 6~~ further comprising generating a first image based on the data samples being acquired in the first direction, generating a second image based on the data samples acquired in the second direction and combining the first and second images into one image.

8. (Currently Amended) The method of ~~anyone of the proceeding~~ claims 1 ~~to 7~~, whereby a number of n k-spaces is used for the interleaved data acquisition, and further comprising the steps of:

- applying a number of n-1 first compensation pulses of a first amplitude,
- applying the second compensation pulse with a second amplitude, where the second amplitude is n-1 times the first amplitude.

9. (Original) A magnetic resonance imaging (MRI) device comprising means for interleaved k-space data acquisition in at least first and second k-spaces.

10. (Currently Amended) The magnetic resonance imaging device of claim 9 comprising:

- means ~~(2, 3, 4, 5, 6, 9, 10)~~ for k-space data acquisition, the k-spaces having a first coordinate axis and a second coordinate axis,
- a control unit ~~(11)~~ for generating of control signals for the means for k-space data acquisition,

wherein the control signals cause the means for k-space data acquisition to

a) sample into a first direction along the first coordinate axis,
b) apply a first compensation pulse,
c) sample into a second direction along the first coordinate axis, the second direction being opposite of the first direction,
d) apply a second compensation pulse,
e) repetitively carry out the steps a) to d).

11. (Original) A computer program product for k-space data acquisition for magnetic resonance imaging (MRI), the computer program product comprising program means to perform k-space data acquisition in at least first and second k-spaces in an interleaved way.

12. (Original) The computer program products of claim 11, the k-spaces having a first coordinate access, the program means being adapted to perform the steps of :

a) sampling into a first direction along the first coordinate axis,
b) applying a first compensation pulse,
c) sampling into a second direction along the first coordinate axis, the second direction being opposite to the first direction,
d) applying a second compensation pulse,
e) repetitively carrying out the steps a) to d).